

Table S1. Swarms fitting to linear migration model

Index	Event Number	Location	Starting Time	Duration (days)	Radius (km)	Azimuth	Dip	Velocity (km/h)
1	189	-115.6448/32.6792	2009/11/1	4.3241	5.2651	-73.3786	-15.5155	0.1196
2	160	-115.5511/32.9404	2003/5/23	2.7769	3.1866	121.8309	7.4028	0.0384
3	53	-115.5817/33.0328	1986/8/3	1.3732	1.8763	124.5602	34.9048	0.0267
4	52	-115.5275/32.9179	2003/3/1	1.2435	1.5853	301.3864	-44.1634	0.1797
5	48	-117.4752/34.0820	1983/10/21	0.6027	0.8257	249.2096	-21.2451	0.0047
6	41	-117.1426/34.0257	2008/5/3	1.1518	1.2565	266.6536	21.1538	0.0017
7	39	-115.5675/32.7932	2008/6/2	0.6686	1.2097	175.1898	-38.4338	0.0072
8	32	-117.1796/34.0152	2013/3/11	1.1196	2.0693	215.4254	24.5916	0.0045
9	31	-116.9881/34.1180	1994/5/4	0.4902	0.4831	145.8842	30.3211	0.0015
10	27	-115.6117/32.8224	1998/12/11	2.1374	3.7078	30.0012	-4.0563	0.0032
11	27	-117.4886/34.0763	2013/6/18	1.4228	1.4465	290.7178	-54.4766	0.0056
12	26	-115.5547/33.0050	2012/11/16	0.6853	1.0112	263.0533	7.4028	0.0442
13	26	-117.2263/34.0180	2003/6/27	0.2494	0.3496	367.4708	-38.4338	0.0073
14	26	-116.1193/33.2550	2006/5/24	0.6760	0.8134	260.7817	30.3211	0.0018
15	25	-115.9768/33.2648	1982/8/31	1.0143	1.5573	63.6439	13.1324	0.0142
16	24	-115.9169/32.9864	1983/1/23	0.8456	0.6692	274.5780	-72.8113	0.0379
17	23	-117.4448/34.0839	1999/10/18	1.2983	1.2967	127.9980	40.6343	0.0051
18	22	-116.1141/33.2487	2006/9/30	0.9988	0.6711	99.8696	-61.3521	0.0189
19	21	-116.9943/34.1053	1993/10/19	0.5635	0.7002	294.5484	7.4028	0.0014
20	20	-117.4357/34.0934	1999/1/24	0.8677	1.1238	287.9995	-15.5155	0.0027
21	20	-115.4518/32.7975	2010/10/14	1.4758	1.5996	287.9458	-38.4338	0.0674

Table S2. Swarms fitting to fluid diffusion migration model

Index	Event Number	Location	Starting Time	Duration (days)	Radius (km)	Diffusion Coefficient
1	187	-117.5102/34.0517	1994/7/15	2.3465	1.9816	0.4440
2	114	-116.2008/33.0677	1983/12/5	0.9425	0.8632	0.1600
3	104	-115.8925/33.0663	2008/10/29	3.1892	3.4182	7.7381
4	51	-117.1592/34.0540	1993/9/5	1.0546	1.0123	0.1270
5	42	-116.2015/33.1061	2009/7/14	0.8438	1.0112	0.0080
6	39	-117.2499/34.0471	1987/3/29	0.9025	1.4870	0.2876
7	33	-116.5005/33.4734	1984/1/9	0.8674	0.8597	0.0340
8	32	-115.4609/32.8118	2011/7/15	1.7341	2.0978	8.8115
9	27	-117.4336/34.1588	2005/9/8	0.8570	0.7771	0.6030
10	27	-115.8951/33.0610	2005/11/23	1.1722	1.7023	1.0004
11	27	-117.1646/34.1236	1981/8/16	0.5686	0.6627	0.7785
12	24	-115.4529/32.7983	2006/11/3	1.0832	1.0467	0.1870
13	23	-115.6050/33.0259	2008/3/15	1.0348	1.0401	0.1280
14	22	-116.7903/33.5388	1988/8/9	0.4858	0.6881	0.0829
15	20	-115.6038/32.8115	2007/6/23	0.3715	0.4658	0.0190